



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

Technical Guide: New Ozone Standards

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Description:

- Ozone is a gas composed of three (3) oxygen atoms, and can be good or bad depending on its location.
- Ozone occurs naturally in the stratosphere approximately ten (10) – thirty (30) miles above the earth's surface and forms a layer that protects life on earth from the sun's harmful rays.
- Ground-level ozone is a pollutant caused by chemicals in the air exposed to sunlight and warm, stagnant weather.
- Emissions from industrial facilities and electric utilities, motor vehicle exhaust, gasoline vapors, and chemical solvents are the major man-made sources of ozone. In some areas of Indiana, as much as 60% of the precursors for ground-level ozone are attributed to mobile sources, such as motor vehicles and lawn implements.

U.S. EPA Standards:

- The United States Environmental Protection Agency (U.S. EPA) sets National Ambient Air Quality Standards (NAAQS) for ozone to protect public health and the environment. The Clean Air Act requires the U.S. EPA to review the scientific information and standards for ozone every five (5) years to ensure the standards adequately protect public health and the environment.
- To determine if an area is meeting (attaining) the NAAQS, monitoring data from three (3) consecutive years are collected. An area attains the standard if the three (3)-year average of the fourth highest daily maximum eight (8)-hour, at each monitor, does not exceed the standard currently in effect.
- In 1997, U.S. EPA set the ozone standard at 0.08 parts per million (ppm) with an eight (8)-hour averaging time; however, due to rounding conventions, the standard has effectively been 0.084. The standard, delayed by extensive litigation, came into effect in 2002.
- On March, 12, 2008, the U.S. EPA revised the eight (8)-hour standard to a level of 0.075 ppm. This standard became effective May 27, 2008, but impacts of the new standard will not be realized until 2013 when Indiana submits and implements a plan for areas of nonattainment to meet the new standard.
- The Clean Air Act requires the U.S. EPA to designate areas as attaining or not attaining the standards after the Agency sets new or revises existing standards. The following schedule will apply to the 2008 revised ozone standards:
 - Based on the air quality data from 2006-2008, states must make recommendations to U.S. EPA no later than March 2009 for areas to be designated as attaining or not attaining the new standard.
 - U.S. EPA will issue final designations by 2010 with consideration of the most recent available data, which will likely be through 2009.

- States must submit State Implementation Plans outlining how they will reduce pollution in nonattainment areas to meet the standards. If U.S. EPA issues designations in 2010, then these plans will likely be due by 2013.
- States are required to meet the standards by deadlines that may vary based on the severity of the problem in the area.

Impacts:

- Ozone can impact both human health and the environment:
 - Ground-level ozone can cause respiratory problems for sensitive groups such as the very young, elderly, or for people with asthma or other chronic respiratory problems.
 - Ozone damages the leaves of trees and other plants, reduces crop and forest yields, and interferes with the ability of plants to produce and store food, making them more susceptible to disease, harsh weather, insects and other pollutants.
 - Ozone, commonly referred to as smog, can stain and damage stone and other materials, causing aesthetic damage to landmarks and municipal property.
 - Ozone and volatile chemicals can be carried long distances, leading to widespread air pollution.
- If attainment designations were made today, twenty-five (25) Indiana counties would not meet the new standard and be designated as nonattainment areas. However, this projection is based on 2007 data, and programs already in place could help all but nine of those counties meet the new standard as early as 2009. Because the actual designation will consider monitoring data through 2009, it is possible that four (4) or fewer counties may be designated as not attaining the new standard.
 - For areas designated as nonattainment, IDEM will be required to submit to U.S. EPA a State Implementation Plan (SIP), which must include an inventory of emissions, enforceable emission limitations, related control measures, and schedules for compliance.
 - In order to improve air quality, areas of nonattainment can expect increased permitting restrictions on new and expanding businesses. Specifically, achieving attainment will likely require additional planning requirements for existing sources of ozone precursor pollutants.
 - These restrictions could disadvantage nonattainment areas when competing with attainment counties to attract new industries and increase economic development.

IDEM's Role:

- The Indiana Department of Environmental Management (IDEM) is responsible for protecting human health and the environment while providing for safe industrial, agricultural, commercial, and governmental operations vital to a prosperous economy.
- IDEM is responsible for protecting air quality in Indiana through the implementation of federal, regional, and state control measures, regulations, and ambient monitoring.
- IDEM works to protect and improve air quality through the monitoring of air quality, issuing of advisories, permitting of businesses which emit ozone precursors, and the education of citizens on their role in improving air quality.
- Under the **current standard**, IDEM helps communities to achieve and maintain attainment designations.
 - For those communities designated as nonattainment areas, IDEM works with U.S. EPA and the community to develop and implement plans to improve air quality by achieving and maintaining the attainment standard.

- Under the current 1997 standard, two (2) counties and one (1) township are still designated as nonattainment; however, IDEM is working with U.S. EPA to improve air quality and redesignate these areas.
- For communities not achieving the **new standard**, IDEM will work to improve air quality and will petition the U.S. EPA to recognize a community's attainment status as soon as they come into compliance with the new ozone standard.
 - IDEM will work with nonattainment communities to implement area-specific programs and requirements to achieve attainment as quickly as possible.
 - Current air regulations, such as the Clean Air Interstate Rule, and several proposed regulations, may help Indiana counties to come into compliance with the new standard.

Citizen's Role:

- Monitor ozone levels in your area. IDEM's Web site, <http://www.in.gov/ide/4652.htm> is updated daily with the latest ozone conditions across Indiana.
- Stay informed about Air Quality Action Days and adjust your exposure and contribution to ozone accordingly.
 - An Air Quality Action Day for ozone is announced to protect sensitive groups when state meteorologists predict conditions will be conducive to the formation of ground-level ozone. On Air Quality Action Days, ground-level ozone could reach levels that pose health risks to sensitive groups.
- There are a number of actions every citizen can take to reduce their contribution to ground-level ozone, improve overall air quality, and help their community attain U.S. EPA ozone standards:
 - Carpool, walk, bike, or use public transportation when possible.
 - Avoid excess idling and drive-thru windows.
 - Consolidate trips and avoid fast-starts.
 - Postpone mowing the lawn or using gasoline-powered garden equipment until late evening.
 - Use energy efficient lighting and appliances.
 - Turn off appliances and lights not in use to reduce emissions from energy production.
 - Recycle to reduce the emissions related to producing paper, plastic, glass bottles, aluminum cans, and cardboard.

More Information:

- For daily regional forecasts of Indiana air quality, including information on the Air Quality Action Days, visit IDEM's SmogWatch Web site at <http://smogwatch.in.gov>.
- For more information on the current eight (8)-hour ozone standard and attainment areas, please visit IDEM's Web site at <http://www.in.gov/ide/4841.htm>.
- For a map of ozone monitors and for the most recent Ozone Emission readings, please visit IDEM's Web site at <http://www.in.gov/ide/4652.htm>.
- For air quality questions and concerns, please call IDEM's Office of Air Quality at (317) 233-0178.